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Heart Failure and Cardiomyopathies

CHANGES IN DRUG UTILIZATION AND OUTCOME IN RELATION TO THE EFFICACY OF CARDIAC RESYNCHRONIZATION THERAPY IN THE MULTICENTER AUTOMATIC DEFIBRILLATION IMPLANTATION TRIAL WITH CARDIAC RESYNCHRONIZATION THERAPY (MADIT-CRT)

Poster Contributions
Hall C
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Session Title: Heart Failure and Cardiomyopathies: Therapy V
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Background: An association of guideline recommended heart failure medication utilization and outcome with the efficacy of cardiac resynchronization efficacy is uninvestigated. This study sought to assess the association between medication utilization and the efficacy of resynchronization therapy in the Multicenter Automatic Defibrillator Implantation Trial with Cardiac Resynchronization therapy (MADIT-CRT) study.

Methods: Patterns of medication use among patients in MADIT-CRT were analyzed. Time-dependent Cox proportional hazard regression analyses were performed to assess differences in hospitalization for heart failure (HF) or death.

Results: The greater the efficacy of cardiac resynchronization therapy as measured by reduction in left ventricular end-systolic volume (LVESV) and increase in left ventricular ejection fraction (LVEF) between baseline and 1-year follow-up , the greater the likelihood that patients remained on ACE-I/ARB and avoided use of or reduced treatment with diuretics. Treatment with diuretics, a marker for congestion, was associated with a significantly increased risk of HF hospitalization or death (hazard ratio [HR]: 1.81, [95% confidence interval (CI):1.42 to 2.30], p=<0.0001), and remaining off diuretics was associated with a significantly decreased risk of HF hospitalization or death (HR: 0.51 [95% CI: 0.39-0.67], p=<0.0001). In contrast, treatment with an angiotensin converting enzyme inhibitor (ACE-I) or angiotensin receptor blocker (ARB) was associated with a significantly decreased risk of HF hospitalization or death (HR: 0.56 [95% CI: 0.38-0.81], p=0.002).

Conclusions: In HF patients in New York Heart Association functional class I and II and with wide QRS complexes, efficacy of resynchronization therapy as measured by improvement in LVESV and LVEF was associated with an increased likelihood of remaining on an ACE-I/ARB and avoiding diuretic therapy. Treatment with an ACE-I/ARB and avoiding treatment with diuretics were associated with a decreased risk of hospitalization for HF or death.